RECLAMATION

Managing Water in the West

Draft Environmental Assessment – Short-Term Transfer of Water From the Anderson-Cottonwood Irrigation District to the City of Shasta Lake

Central Valley Project, CA
Mid-Pacific Region

U.S. Department of the Interior
Bureau of Reclamation

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Introduction

The Bureau of Reclamation proposes to approve a short-term transfer of Central Valley Project (CVP) water from the Anderson-Cottonwood Irrigation District (ACID), a Sacramento River Settlement Contractor, to the city of Shasta Lake (City), a water service contractor. This transfer is being undertaken pursuant to, and will be in full compliance with, Section 3405(a) of Public Law 102-575, Title 34, of the Central Valley Project Improvement Act.

ACID

The ACID is located in the Sacramento Valley immediately south of Redding, California. Reclamation and the ACID entered into a 40-year renewal of the Sacramento River Settlement Contract (Settlement Contract), Contract No. 14-06-200-3346A-R-1, on March 4, 2005, with an effective date of April 1, 2005. This Settlement Contract provides for the diversion of up to 121,000 acre-feet (af) of base supply water and up to 4,000 af of CVP water supplies each year during the period April through October. Article 3(e) of the Settlement Contract provides for transfers of CVP water upon the written consent of Reclamation.

City of Shasta Lake

The City is located along Interstate 5 in northern California, approximately 5 miles from Redding. Reclamation and the City entered into a 40-year long-term renewal contract, Contract No. 4-07-20-W1134-LTR1, on February 25, 2005, with an effective date of March 1, 2005. This contract provides for the diversion of up to 4,400 af of CVP water each year during the period March of the current calendar year and through the last day of February of the following calendar year. Articles 11 and 12 provide CVP water supplies may be reduced and sub-article 12(d) provides CVP water furnished under the water service contract will be allocated in accordance with the then-existing Project Municipal and Industrial Water Shortage Policy.

The City physically takes its water from outlet works at the Shasta Dam at either the 750- or the 950-foot elevations, although for purposes of this transfer, only the 950-foot elevation would be used. Water is then conveyed from the dam by pipelines to a pump station that moves the water uphill to a treatment plant where it is then conveyed by gravity flow through pipelines to the City.

Purpose and Need

The purpose of the transfer is to shore up water supplies for the 2010 water year. The need for the transfer arises from shortages caused by a relatively inelastic demand and reduced allocations anticipated for this year.

Alternatives

Proposed Action

The proposed action is approval of a transfer of up to 1,000 af of CVP water from the ACID beginning April 1, 2010, and continuing through October 31, 2010, or until the Shasta Reservoir level drops below the 950-foot elevation diversion.

The water would be made available from the ACID's CVP water supply and diverted through existing diversion facilities. The CVP water to be transferred would be diverted at the 950-foot elevation at the Shasta Reservoir and treated and distributed to existing municipal and industrial customers.

No Action Alternative

Under the no action alternative, Reclamation would not approve the proposed action. The City would be required to operate within the confines of the water supply under its water service contract or purchase water from other available sources. Were they to obtain water from another source, the no action alternative would be functionally the same as the proposed action apart from differences in the parties and possibly the financial terms.

Affected Environment and Environmental Consequences

Physical Resources

The existing resource of interest is the cold water pool behind the Shasta Dam, which is key to maintaining water temperatures in the Sacramento River low enough to sustain successful salmon spawning. That objective is consistently difficult to achieve to the desired level, making retention of cold water critical to CVP operations. Therefore, withdrawals from below the thermocline, which

generally begins 30 to 60 feet below the surface during the summer, is undesirable. Withdrawals from above the thermocline also affect the volume of the cold water pool but less than would direct withdrawals from the cold water pool. Each withdrawal of water from above the thermocline would reduce the thickness of that uppermost layer, allowing the thoroughly mixed upper layer to extend deeper into the reservoir, driving the thermocline deeper, and thereby reducing the volume of the cold water pool.

As of February 17, 2010, the water levels were at elevation 1013, about 63 feet above the 950-foot intake, and probably will rise further before the reservoir levels again begin to drop with the onset of summer. It would be very speculative to say when that will happen, but with the lake only 68 percent full on February 17, it is plausible to expect the thermocline to drop below the 950-foot elevation sometime during the coming irrigation season. At that time, it would be feasible to withdraw water from the 950-foot elevation without drawing from the cold water pool. Withdrawal above the thermocline would slightly reduce the volume of the warm water pool.

Using the average volumes of water represented by the storage above (24,400 af per foot [af/ft]) and below (7,230 af/ft) the current 1013-foot elevation, a 1,000 af withdrawal from a 30-foot-thick warm water layer would only change the volume of the warm water layer by 0.5 percent, even if the very conservative 7,230 af/ft value for the average volume change per foot elevation change in the cold water pool is used as an estimate. A more realistic, but still conservative, estimate would be to assume the average of those two averages for volume change per foot of elevation change (15,800 af/ft), which gives an estimate of a 0.2 percent change in the volume of the warm water pool. That change is unlikely to measureably affect the location of the thermocline and, hence, is unlikely to affect the size of the cold water pool.

The City's service area consists of gently rolling terrain covered with the oak-pine forests of the lower foothills and contains perennial, warm water streams. No adverse impacts on CVP water delivery are anticipated as a result of this transfer on either the river or the uplands and warm water streams within the City's service area, as the water will merely supplement the diminished supplies otherwise available for 2010.

The existing developments lie outside the limited areas with vernal pools, the area's only unique geologic features of the area. Thus, no adverse affects on unique geological features are expected from this proposed transfer.

Biological Resources

No negative impacts to aquatic and riparian plants or wildlife are expected given the absence of measureable affects on the cold water pool. Given the lack of new construction as a result of this temporary supply, no impacts are expected on

terrestrial species. Thus, no affects on the habitats of either listed or unlisted species are expected.

Cultural Resources

No negative impacts to cultural resources are anticipated because no new or additional land would be placed under irrigation or converted to municipal and industrial purposes. New facilities would not be constructed that would not otherwise be built. Therefore, no properties listed, or eligible to be listed, in the National Register of Historic Places would be affected by the transfer.

The transfer would be consistent with the Department of the Interior environmental justice guidelines. It would not preferentially favor nor discriminate against any socioeconomic groups.

Socioeconomic Resources

Under the terms of the proposed action, the transfer would not adversely affect the quality of human environment, involve unresolved conflicts concerning alternative uses of available resources, or have adverse effects on public health or safety. It would support predominantly existing development but would not induce new development.

Indian Trust Assets

No Indian Trust Assets (ITAs) are served by the water to be transferred under the proposed action, and the water supplies to the Redding Rancheria, the nearest ITA, would not be affected. Therefore, no ITAs would be affected.

CVP Operations

There would be no identifiable impacts to CVP operations as a result of the transfer because the transfer would not involve changes large enough to affect operations, and the same changes could be expected under the no action alternative. Therefore, no impacts associated with water delivery, or other impacts to CVP operations, are anticipated as a result of the proposed transfer.

Cumulative Impacts

The proposed transfer will not result in any adverse cumulative impacts. The water would be transferred pursuant to valid Sacramento River Settlement and Water Service Contracts and would be distributed using existing diversion and

conveyance facilities. The transfer would not have highly controversial or uncertain environmental effects or involve unique or unknown environmental risks, nor would the transfer be related to other actions with individually insignificant, but cumulatively significant, environmental effects.

Consultation and Coordination

No consultation was required under the Endangered Species Act because Reclamation determined there would be no affect on protected riverine species, which, in this case, would be the winter-run and spring-run Chinook salmon, steelhead, green sturgeon, and the bald eagle, due to changes in water flows. Upland or riparian species, such as the Valley Elderberry Longhorn Beetle, and vernal pool species, such as fairy shrimp, would not be affected, because no habitat changes would result from the action.